REMARKS

Claims 2-30 and 32-40 are pending in this application. Applicants have not amended any claims in this response.

Claim Rejections – 35 USC § 102

Claims 30 and 32-40 have been rejected under 35 U.S.C. § 102(a) as being anticipated by Keller et al. (Dynamic Dependencies in Application Service Management). Applicants respectfully request reconsideration.

Independent claim 30 is directed to a method for determining dependencies between at least two components in an IT system. The claimed method includes the step of "monitoring the usage of resources by the two components in the IT system by receiving real-time messages and, if a resource is used by one of the two components, generating a message indicating the use of that resource by that component." Claim 30 also requires "accumulating each message" and "if the accumulated messages indicate that the two components use the same resource, then indicating that a dependency between the two components has been detected." Independent claim 40 claims an apparatus having a processor to perform these steps.

Thus, claims 30 and 40 relate to determining dependencies between components in an IT system in real-time; that is, determining dependencies by receiving real-time messages. The use of "real-time messages" for determining dependencies means that the dependency information is not determined entirely from existing sources.

The Keller paper relates to obtaining dependency information from a database of static dependencies and from repositories in the environment. For example, page 6 of the Keller paper refers to the construction of a "database of static dependencies." The Keller paper also discloses obtaining dependencies by evaluating if the application "lists its dependencies" and by acquiring dependency information from the repositories in the environment, such as a "system repository, configuration and installation files." (*See* Keller paper, page 5, left column, top.) The Keller paper also explains that monitoring of dependencies "is possible because the dependency relationships of the majority of networked services are explicitly listed in the system repository." (*See* Keller paper, page 5, right column, bottom.) Thus, the Keller paper discloses acquiring dependency information from existing repositories of information, not through the reception of real-time messages.

10

In response to Applicants' arguments in its previous response, the Examiner cites (Non-Final Office Action at 20) page 6, right column, first paragraph of the Keller paper, which reads: "Off-the-shelf network management platforms and Mid-level Managers (MLM) provide the basis of this architecture and offer services such as event reception and forwarding, resource discovery functions or topology services." However, the very next sentence after that cited by the Examiner on page 6 of the Keller paper refers to the construction of a "database of static dependencies." This underscores Applicants' position that the discovery in the Keller paper does not take place through the receipt of real-time messages. The recitation of "event reception" and "resource discovery functions" in the cited section of the Keller paper does not mean that discovery is done through the use of real-time messages as in Applicants' claimed invention.

The Examiner also cites the following language from the Keller paper in asserting that Keller teaches monitoring usage of resources by receiving real-time messages:

> Discovering and enumerating the dependency relationships that applications have on lower layer services in a networked environment is a difficult problem. It has both a static and dynamic aspect, that is, dependencies identified at application install time and those discovered at runtime. The functional dependency model can be used to describe static dependencies between application and service categories. The structural part captures dynamic information related to concrete service implementations.
> Keller paper, page 5, right column, bottom to page 6, left column, top.
> …
> This view can best be represented by a multilevel resource tree, where the elements in one level are dependent on the availability and status of elements at the next lower level. One way to use the service view is to represent it graphically on one of the service management stations where a service manager can observe the status of the service and do typical drill down operations for troubleshooting.
> Keller paper, page 6, right column, 2nd paragraph.

The cited language cited by the Examiner does not teach the reception of <u>real-time messages</u> for dependency discovery. Although the cited language does refer to dependencies "discovered at runtime," nothing states that these dependencies are discovered

through the use of "real-time messages." Instead, this discovery in the Keller paper depends upon existing repositories of information in the system, as set forth above.

The Keller paper does not teach monitoring the real-time usage of resources by components by "receiving real-time messages" and "indicating that a dependency between the two components has been detected" as required by independent claims 30 and 40. As such, the Keller paper fails to disclose at least this element of the invention from claims 30 and 40, and Keller cannot, therefore, anticipate claims 30 and 40

Applicants submit that independent claims 30 and 40, and the claims that depend from those claims, are in condition of allowance. In particular, dependent claims 32-39 depend directly or indirectly from independent claim 30, and are therefore in condition for allowance. Applicants respectfully request reconsideration of this ground for rejection.

Claim Rejections – 35 USC § 103

Claims 2-12 and 14-15

Claims 2-12 and 14-15, which include independent claims 5, 14, and 15, have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kar et al., (An Architecture for Managing Application Services over Global Networks), in view of Kathrow, et al. (U.S. Pat. No. 6,393,438 B1). Applicants respectfully request reconsideration.

Independent claim 5 is directed to a method for collecting information on components in an IT system. According to the invention of claim 5, real-time event information relating to a first component is received, the first component and other components are compared to a fingerprint, and it is determined that a component exists when "all of the elements of the fingerprint corresponding to the known component are matched." A "known component" is a component whose elements are known and can therefore be modeled. The fingerprint, which is derived from the model of the known component, can be used to determine the existence of a component on the IT system without prior knowledge of whether or not the component exists on the IT system.

As an initial matter, there is no question that the Kar paper does not disclose the step of claim 5 of "discovering the existence of at least one of the components in the IT system by receiving real-time messages and using at least one fingerprint." The Examiner admits this on page 7 of the Non-Final Office action. The Examiner also agrees that the Kar paper does not

12

disclose the steps of claim 5 of "receiving the real-time messages as event information regarding an occurrence in the IT system, the occurrence relating to a first component, comparing the first component along with other components to the at least one fingerprint, wherein the fingerprint represents key low-level elements of a model of a known component, and determining that at least one of the components exists when all of the elements of the fingerprint corresponding to the known component are matched." Recognizing that more is needed, the Non-Final Office Action at page 7 cites the Kathrow patent as disclosing these features.

As Applicants emphasized in their previous response, the Kathrow patent relates to identifying <u>differences between two files</u>. (*See, e.g.*, Kathrow patent, Title, Abstract.) Regarding Figure 4 of the Kathrow patent, which the Examiner cites, the Kathrow patent states that "a method for determining whether a Windows registry file has changed from a prior version is shown...." (column 11, ll. 5-8; see also column 3, ll. 8-12). In particular, the Kathrow patent discloses the generation of a "fingerprint" for the registry file (col. 11, ll. 22-28) and the use of this fingerprint to identify differences for a later version of the same file. In order to determine the differences for the file, the Kathrow patent teaches the generation of a fingerprint for the later version of the file by using the same technique used to generate the original fingerprint. (Col. 11, ll. 49-56.) The system then compares these two fingerprints to determine differences for the file:

> The fingerprint produced in step 430 is compared 432 with the fingerprint stored in step 420 as identified by the user in step 424, if applicable. If the fingerprints are identical 434, the method terminates 440. In one embodiment, step 440 also includes notifying the user whether the fingerprints were identical. If the fingerprints are not identical 434, differences may be identified 436 between the values corresponding to the two fingerprints compared in step 432.

> (Figure 4, column 11, ll. 56-64)

Unlike the claimed invention of independent claim 5, Kathrow does not use the fingerprints to discover component existence through the receipt of real-time messages, but instead merely determines "whether a Windows registry file has changed from a prior version." (Col. 11, ll. 5-8.) The Examiner agrees on page 7 of the Non-Final Office Action that Kathrow discloses "identifying the existence of differences between two files based upon the fingerprints." More particularly, the Kathrow patent does not disclose at least the steps of independent claim 5 of "discovering the existence of at least one of the components in the IT

13

system by receiving real-time messages and using at least one fingerprint" and "determining that at least one of the components exists when all of the elements of the fingerprint corresponding to the known component are matched." The Examiner cites item 440 of Figure 4 and column 11, lines 59-62 of the Kathrow patent as teaching this feature. (Non-Final Office Action at page 7.) However, step 440 of Figure 4 is merely a termination step that can also include "notifying the user whether the fingerprints were identical." Step 440, however, does not relate to determining the existence of a component if the elements of a fingerprint match. In the Kathrow patent, the existence of the component is already known, and instead, the fingerprint is used to find differences in the file over time.

In response to Applicants' arguments in its previous response, the Examiner states that it is the combination of the Kathrow patent and the Kar paper that render the claimed invention obvious. (Non-Final Office Action at 19.) However, a prima facie case of obviousness requires a teaching or suggestion of all claim limitations. (MPEP §2143.) The Examiner must show the teaching of each and every element of a claim in a prior art combination for an obviousness rejection. As Applicants have shown, the cited prior art fails to teach or suggest all of the claim limitations. In particular, neither the Kar paper nor the Kathrow patent teach component discovery using fingerprints. Before two prior art references can be combined to form a claimed invention, each and every element must be shown in the prior art. Thus, the Kathrow patent cannot be combined with the Kar paper to form the claimed invention.

The Examiner also fails to identify a sufficient motivation to combine the Kar paper and the Kathrow patent to form the claimed invention. A prima facie case of obviousness requires a suggestion or motivation to combine the references to form the claimed invention and a reasonable expectation of success. (MPEP §2143.) The Examiner states that the motivation to combine the two references is that a person in the art "would have been motivated to fingerprint check not only one file out of multiple files that were from the division out of a single file, but all multiple files to ensure the integrity of a file ... in the management of applications per Kar...." (Non-Final Office Action at page 18.) The Kar paper does not teach real-time discovery of components using fingerprints; nor does the Kathrow patent. Not only are claimed elements missing from both prior art references, but there also is no motivation to form the claimed combination. More particularly, nothing in the Kar paper suggests the use of fingerprints for component discovery, and nothing in the Kathrow patent motivates using such a

14

feature (which is not taught by Kathrow) in the system of the Kar paper. The Examiner's statement regarding a motivation to combine does not address the lack of disclosure of component discovery using real-time messages in each cited reference.

Claims 2-4 and 6-12 depend directly or indirectly from independent claim 5. These claims, therefore, are also in condition for allowance.

Finally, independent claims 14-15 include similar features to those discussed above in connection with independent claim 5. As such, Applicants respectfully submit that these claims are also in condition for allowance.

Claim 13

Independent claim 13 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Kar paper in view of the Kathrow patent. Applicants respectfully request reconsideration.

Claim 13 requires an analysis module to, in part, "match event information with elements of one or more fingerprints of known components using an accumulator to discover the existence on the IT system of at least one of the components." For the same reasons set forth above in connection with independent claim 5, the Kathrow patent does not disclose comparing components based on event information to a fingerprint. Similarly, as the Examiner agrees on pages 10-11 of the Non-Final Office Action, the Kar paper "does not show matching event information with elements of one or more fingerprints of known components." Because this element is not taught or suggested by the Kathrow patent or the Kar paper, the Kathrow patent cannot properly be combined with the Kar paper to form the claimed invention. Applicants, therefore, respectfully request reconsideration for this ground of rejection.

Claims 16-24

Claims 16-24, including independent claims 16, 23, and 24, have been rejected under 35 U.S.C. §103(a) as being unpatentable over the Kathrow patent in view of the Kar paper. Applicants respectfully request reconsideration.

There is no doubt that, as the Examiner agrees in the Non-Final Office Action, "Kathrow does not show if the first component and the other discovered components match substantially all of the key low-level element of the fingerprint, using a subfingerprint of a known refined component to discover the existence of a second component that corresponds to the known

refined component." Recognizing that more is needed, the Examiner cites the Kar paper at pages 5-6 as disclosing this feature.

The Kar paper does not cure the deficiencies of the Kathrow patent. In particular, there is no disclosure in the Kar paper relating to the use of fingerprints or subfingerprints. In fact, with respect to claim 13, the Examiner acknowledged that "Kar does not show matching event information with elements of one or more fingerprints of known components." As the Applicants set forth in the previous response, the cited disclosure from pages 5-6 of the Kar paper does not relate to the use of "a subfingerprint of a known refined component to discover the existence of a second component," as required by claim 16. The cited section says nothing about fingerprints, subfingerprints, or the discovery of a "second component" using "a subfingerprint of a known refined component." Thus, neither the Kar paper nor the Kathrow patent discloses the step of "if the first component and the other discovered components match substantially all of the key low-level elements of the fingerprint, using a subfingerprint of a known refined component to discover the existence of a second component that corresponds to the known refined component."

For at least these reasons, Applicants submit that the combination of Kathrow and Kar does not disclose all of the claimed limitations of claim 16.

In addition, for the reasons set forth above in connection with claims 5 and 13, the Kathrow patent does not disclose "comparing the first component along with other components to at least one fingerprint, wherein the fingerprint represents key low-level elements of a model of a known component," as required by claim 16.

Claims 17-22 depend directly or indirectly from claim 16 and are also in condition for allowance. Applicants respectfully request reconsideration.

Independent claims 23 and 24 contain similar limitations as those recited above for claim 16. These claims, therefore, are also allowable over the combination of Kathrow and Kar.

Claims 25-27 and 28-29

Claims 25-27 and 28-29 also stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Kathrow patent in view of the Kar paper. Regarding independent claims 25 and 28, the Examiner relies upon an analysis similar to that set forth for independent claim 16 above. For the reasons set forth above, Applicants respectfully submit that the Kathrow patent does not teach the features of claim 25 of, "if the first component matches at least one low-level element

of a fingerprint of a model of a known component...." Applicants also respectfully submit that the Kathrow patent does not teach the features of claim 28 relating to "using a fingerprint of a model of a known component to discover an existing component in the IT system by matching passive elements in the fingerprint with event information of the IT system." Further, the Kar paper does not disclose the use of a "subfingerprint of a known refined component ... to discover a refined component," as required by claim 25. Claim 28 requires a similar feature. Applicants, therefore, submit that claims 25 and 28 are allowable over the combination of the Kathrow patent and the Kar paper. Claims 26-27 depend from claim 25 and claim 29 depends from claim 28. These dependant claims, therefore, are also in condition for allowance. Applicants respectfully request reconsideration of this ground for rejection.
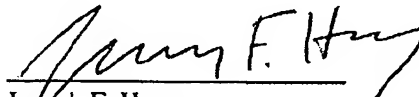
CONCLUSION

Applicants incorporate by reference the comments in the previous responses to Office Actions for this application, which distinguish the cited prior art combination for additional reasons than those set forth above.

For the reasons stated above, Applicants believe that the claims now pending in this application are allowable. Applicants respectfully request reconsideration and allowance.

Applicants request a three-month extension of time up to and including November 30, 2006, in order to timely file this response. The Commissioner is hereby authorized to charge the fee of $1020.00 to Deposit Account No. 08-0219. No other fees are believed due, however please apply any charges not covered, or any credits, to Deposit Account No. 08-0219.

Respectfully submitted,

Dated: November 29, 2006

Joseph F. Haag
Registration No.: 42,612
Attorney for Applicant(s)

Wilmer Cutler Pickering Hale and Dorr LLP
60 State Street
Boston, Massachusetts 02109
(617) 526-6000 (telephone)
(617) 526-5000 (facsimile)

17